

Surface and Interfaces of Transparent Conducting Oxides

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Surfaces and Interfaces of Transparent Conducting Oxides (TCO) are important for their application in gas sensors and optoelectronic devices but also for the post-processing behaviour of the materials. The presentation will provide an overview of the chemical and electronic properties of undoped and doped ZnO, SnO₂ and In₂O₃ surfaces and interfaces including surface potentials (Fermi level positions, work functions, ionization potentials), oxygen exchange properties for establishing defect equilibria, as well as energy band alignment and Fermi level pinning. Aspects of TCO/organic as well as well as of TCO/inorganic interfaces will be covered.